

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re application of:	IVKOVICH, Jr. et al.	:	Confirmation No.: 7687
		:	
Application No.:	10/681,676	:	Group Art Unit: 1734
		:	
Filed:	October 8, 2003	:	Examiner: Sonya MAZUMDAR
		:	

For: METHOD OF APPLYING AN OPTICAL COATING TO AN ARTICLE SURFACE

**APPEAL BRIEF**

Mail Stop Appeal Brief - Patents  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

Applicant files its Appeal Brief, together with a Fee Transmittal authorizing the charging of the required fee. A Notice of Appeal and fee were previously filed.

**Real party in interest**

The real party in interest is General Electric Co.

**Related appeals and interferences**

The Board issued a decision in November, 2006 regarding U.S. App. No. 10/702,801, also assigned to General Electric Co and having common inventorship. While that application is legally unrelated to the instant Application, the nature of the subject matter and applied references may make that appeal one "which may ... have a bearing on the Board's decision in the pending appeal." 37 C.F.R. §41.37(c)(1)(ii). A copy of the Board's decision in the '801 Application is attached at Appendix III.

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Status of claims

Claims 1-24 were filed.

During prosecution, claim 23 was amended.

Claims 1-24 are pending, and all claims were finally rejected in the Final Office Action of December 28, 2006.

The final rejection of claims 1-24 is appealed.

Status of amendments

A Response to Final Office Action was filed, but it had no claim amendments.

Summary of claimed subject matter

There are three independent method claims 1, 21, and 23. There are no "means" claims.

The steps of the method claim 1 are illustrated in Figure 2. Figure 3 illustrates the structure associated with the method. The method and associated structure are discussed at para. [0025]-[0039] of the Specification.

Claim 1 recites a method for applying an optical coating (24) to an article surface (22) of an article (20), comprising the steps of providing (step 60) a deposition substrate (pg. 8, ln 1-2), thereafter applying (step 62) a first release system (32) to the deposition substrate (pg. 8, ln 6), and thereafter depositing (step 64) the optical coating (24) onto the deposition substrate, with the first release system (32) between the optical coating (24) and the deposition substrate (pg. 8, ln 12-14). The optical coating (24) has a first face (34) contacting the first release system (32), and a second face (36) remote from the first face (34) (pg. 8, ln 14-15). The method further includes thereafter applying (step 66) a second release system (38) and a transfer substrate (44) to the second face (36) of the optical coating (24), wherein the first release system (32) is dissolvable in a first-release-coating solvent that does not dissolve the second release system (38) (pg. 9, ln 9-14), thereafter dissolving (step 70) the first release system (32) in the first-release-coating solvent to separate the optical coating (24) from the deposition substrate (pg. 10, ln 8-13), wherein the first face (34) of the optical coating (24) becomes an exposed free face, thereafter furnishing (step 72) the article (20) having the article surface (22), thereafter affixing (step 74) the first face (34) of the optical coating (24) to the article surface (22), and thereafter

separating (step 76) the transfer substrate (44) from the second face (36) of the optical coating (24) (pg. 10, ln 14-26).

The steps of the method claim 21 are illustrated in Figure 2. Figure 3 illustrates the structure associated with the method. The method and associated structure are discussed at para. [0025]-[0039] of the Specification.

Claim 21 recites a method for applying an optical coating (24) to an article surface (22) of an article (20), comprising the steps of providing (step 60) an organic deposition substrate (pg. 8, ln 1-3), thereafter applying (step 62) a first release system (32) to the deposition substrate (pg. 8, ln 6), and thereafter depositing (step 64) the optical coating (24) onto the deposition substrate, with the first release system (32) between the optical coating (24) and the deposition substrate (pg. 8, ln 12-14). The optical coating (24) has a first face (34) contacting the first release system (32), and a second face (36) remote from the first face (34) (pg. 8, ln 14-15). The method further includes thereafter providing (step 60) a release-and-transfer structure having a second release system (38) integrated with a transfer substrate (44), thereafter applying the release-and-transfer structure to the second face (36) of the optical coating (24), wherein the first release system (32) is dissolvable in a first-release-coating solvent that does not dissolve the release-and-transfer structure (pg. 9, lines 9-20), thereafter dissolving (step 70) the first release system (32) in the first-release-coating solvent to separate the optical coating (24) from the deposition substrate, wherein the first face (34) of the optical coating (24) becomes an exposed free face, thereafter furnishing (step 72) the article (20) having the article surface (22) (pg. 10, ln 8-13), and thereafter affixing (step 74) the first face (34) of the optical coating (24) to the article surface (22). The step of affixing (step 74) includes the steps of positioning a bonding element (46) between the first face (34) of the optical coating (24) and the article surface (22), and pressing the bonding element (46), the first face (34), and the article surface (22) together at an elevated temperature (pg. 10, ln. 24-28). The method further includes separating (step 76) the transfer substrate (44) from the second face (36) of the optical coating (24).

The steps of the method claim 23 are illustrated in Figure 2. Figure 3 illustrates the structure associated with the method. The method and associated structure are discussed at para. [0025]-[0039] of the Specification.

Claim 23 recites a method for applying an optical coating (24) to an article surface (22) of an article (20), comprising the steps of depositing (step 64) the optical coating (24) onto a deposition substrate separate from the article surface (22) (pg. 8, ln 12-14), furnishing (step 72) the article (20) having the article surface (22) (pg. 10, ln 17), and thereafter transferring the optical coating (24) from the deposition substrate to the article

surface (22), wherein the method utilizes two different release systems to accomplish the step of transferring (pg. 9, ln 28-29).

Grounds of rejection to be reviewed on appeal

**Ground 1.** Claims 1, 4-9, 15, 23, and 24 are rejected under 35 USC 102 as anticipated by Ross U.S. Patent 5,830,529.

**Ground 2.** Claim 2 is rejected under 35 USC 103 over Ross '529 in view of Duchane '999.

**Ground 3.** Claim 3 is rejected under 35 USC 103 as unpatentable over Ross '529 in view of Shaul U.S. Patent 3,925,138.

**Ground 4.** Claims 10-12 are rejected under 35 USC 103 over Ross '529 and further in view of Conolly U.S. Patent 4,623,087.

**Ground 5.** Claims 13, 16-18, and 20 are rejected under 35 USC 103 over Ross '529 and further in view of Hankland U.S. Patent 4,407,685.

**Ground 6.** Claim 19 is rejected under 35 USC 103 as unpatentable over Ross '529 in view of Alexander U.S. Patent 3,654,016.

**Ground 7.** Claim 14 is rejected under 35 USC 103 as unpatentable over Ross '529 in view of Oliva U.S. Patent 4,153,494.

**Ground 8.** Claims 21 and 22 are rejected under 35 USC 103 over Ross '529 in view of Duchane '999 and Hankland '685.

Argument

**Ground 1.** Claims 1, 4-9, 15, 23, and 24 are rejected under 35 USC 102 as anticipated by Ross U.S. Patent 5,830,529.

The following principle of law applies to §102 rejections. MPEP 2131 provides: "A claim is anticipated only if each and every element as set forth in the claim is found, either

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expressly or inherently described, in a single prior art reference. The identical invention must be shown in as complete detail as is contained in the ... claim. The elements must be arranged as required by the claim..." [citations omitted]. This is in accord with the decisions of the courts. Anticipation under §102 requires 'the presence in a single prior art disclosure of all elements of a claimed invention arranged as in that claim.' Carella v. Starlight Archery, 231 USPQ 644, 646 (Fed. Cir., 1986), quoting Panduit Corporation v. Dennison Manufacturing Corp., 227 USPQ 337, 350 (Fed. Cir., 1985).

Thus, identifying a single element of the claim, which is not disclosed in the reference, is sufficient to overcome a §102 rejection.

#### Claim 1

Claim 1 recites in part:

"applying a first release system to the deposition substrate...;

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applying a second release system and a transfer substrate to the second face of the optical coating...

\*\*\*\*\*

dissolving the first release system in the first-release-coating solvent..."

Claim 1 recites two different release systems. Ross has no disclosure of "a first release system" and "a second release system," only a single release system.

Claim 1 further recites in part:

"the first release system is dissolvable in a first-release-coating solvent that does not dissolve the second release system;"

Applicant finds no disclosure in Ross that a first release system is dissolvable in a first-release-coating solvent that does not dissolve a second release system.

The explanation of the rejection (Final Office Action page 2) speaks generally about some coating variations, but does not address these limitations. The explanation of the rejection references portions of Ross that simply do not disclose these limitations, for example col. 9, line 66-col. 10, line 3, which defines terms but does not explain how structures are interrelated; col. 5, lines 41-63, which also defines terms but does not explain how structures are interrelated; col. 18, lines 47-67, which discusses expanding the coating

to make it thick enough, a concept not associated with the present invention, and defines terms; col. 19, line 30, which uses the term "water slide" without explaining what the term means (Applicant will address exactly what "water slide paper" means in the next paragraph); and col. 28, lines 38-39, and col. 28, lines 38-39, which states some possible compositions for a base.

The explanation of the rejection interprets "water slide paper" to suggest that something dissolves in water, but there is no basis in Ross or other document of record to support this interpretation. If Applicant understands the Response to Arguments correctly, it is asserted that the "water slide paper" is a release system that meets the language "applying a first release system to the deposition substrate." The "water slide" is not a release system that is applied to a deposition substrate; see for example the Abstract of Ross, which identifies "water slide paper." Ross never uses the term "water slide coating" as found in the explanation of the rejection, and instead refers to "water slide paper." Ross discloses the use of water slide paper 1 at col. 60, line 42-col. 61, line 11, and illustrates the approach using water slide paper in Figure 37D.

Nor does the water slide paper of Ross meet the claim language "the first release system is dissolvable in a first-release-coating solvent that does not dissolve the second release system." The water slide paper does not dissolve in water or anything else, as is clear from Figure 37D, which shows the water slide paper 1 being removed as a unit in the direction 66. The water slide paper 1 was not dissolved, nor was it disclosed as being applied to a substrate.

#### Claim 4

Claim 4 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 1. Claim 1 is patentable over this ground of rejection, and claim 4 is patentable as well.

Further, claim 4 recites in part:

"depositing the optical coating as a multilayer coating."

Ross does not disclose depositing a multilayer coating, and the explanation of the rejection does not assert that it does. Specific types of optical coatings are sometimes prepared as multilayer coatings, but Ross never mentions such coatings at all, and never mentions multilayer coatings.

Claim 5

Claim 5 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 1. Claim 1 is patentable over this ground of rejection, and claim 5 is patentable as well.

Claim 5 further recites in part:

“providing a compliant transfer substrate.”

Ross has no such disclosure, and the explanation of the rejection does not assert that it does. Ross speaks of the base being made of materials that may be compliant (e.g., col. 28, lines 38-42), but never suggests that any element that may be interpreted as a transfer substrate is compliant.

Claim 6

Claim 6 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 1. Claim 1 is patentable over this ground of rejection, and claim 6 is patentable as well.

Claim 6 further recites in part:

“providing a castable transfer substrate.”

Ross has no such disclosure, and the explanation of the rejection does not assert that it does. Applicant has studied the referenced and other portions of Ross and cannot find any element of structure that could remotely be described as a castable transfer substrate.

Claim 7

Claim 7 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 1. Claim 1 is patentable over this ground of rejection, and claim 7 is patentable as well.

Claim 7 further recites in part:

"the step of applying the second release system and transfer substrate includes the steps of

applying the second release system to the second face of the optical coating, wherein the second release system has a first face contacting the second face of the optical coating, and a second face remote from the first face, and thereafter

affixing the transfer substrate to the second face of the optical coating, with the second release system between the transfer substrate and the second face of the optical coating."

Ross teaches only a single release system, not two release systems used together in the same process in the recited manner. Nor does Ross disclose anything like the procedure recited in claim 7. The explanation of the rejection does not assert that Ross has any such disclosure. The explanation of the rejection references col. 23, lines 19-23, which merely describes some materials that may be used with the edge-registered coating process of Ross.

#### Claim 8

Claim 8 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 1. Claim 1 is patentable over this ground of rejection, and claim 8 is patentable as well.

Claim 8 also recites in part:

"the step of applying the second release system and transfer substrate includes the step of

providing a release-and-transfer structure having the second release system integrated with the transfer substrate."

The explanation of the rejection references (Final Office Action, page 3, lines 1-3) the transfer tape disclosed at col. 38, lines 8-10 of Ross. However, claim 8 does not recite a transfer tape. Instead, it recites the integration of the second release system with the transfer substrate. Ross has no such disclosure.



Claim 9

Claim 9 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 1. Claim 1 is patentable over this ground of rejection, and claim 9 is patentable as well.

Claim 9 also recites in part:

“providing a release-and-transfer structure having the second release system integrated with the transfer substrate, wherein the release-and-transfer structure is a polymeric releasable adhesive tape.”

The explanation of the rejection references the mention of transfer tape disclosed at col. 38, lines 8-10 of Ross. But Ross does not disclose a polymeric transfer tape, and Ross does not disclose that a second release system is integrated with the transfer substrate, wherein the release-and-transfer structure is a polymeric releasable adhesive tape. The explanation of the rejection does not address these limitations in any way.

Claim 15

Claim 15 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 1. Claim 1 is patentable over this ground of rejection, and claim 15 is patentable as well.

Claim 15 also recites in part:

“bonding the first face of the optical coating to a bonding element, and thereafter  
bonding the bonding element to the article surface.”

Ross has no such disclosure, and the explanation of the rejection does not assert that it does. The closest the explanation of the rejection comes is to reference col. 43, lines 35-43 of Ross, but this portion of Ross does not mention a bonding element, an adhesive, or anything of the sort. It only describes the final state of the coating embodiment of Figure 20D.

Claim 23

Claim 23 recites in part:

"the method utilizes two different release systems to accomplish the step of transferring."

Claim 23 recites two different release systems. Ross has no disclosure of two different release systems used together to accomplish a transfer. The explanation of the rejection does not address this limitation.

If Applicant understands the Response to Arguments correctly, it is asserted that the "water slide" is a release system that meets the language "applying a first release system to the deposition substrate," which explains the confusion. The "water slide" is not a release system that is applied to a deposition substrate; see for example the Abstract of Ross, which identifies "water slide paper." Ross never uses the term "water slide coating" as found in the explanation of the rejection, and instead refers to "water slide paper." Ross discloses the use of water slide paper 1 at col. 60, line 42-col. 61, line 11, and illustrates the approach using water slide paper in Figure 37D.

Nor does the water slide paper of Ross meet the claim language "the first release system is dissolvable in a first-release-coating solvent that does not dissolve the second release system." The water slide paper does not dissolve in water or anything else, as is clear from Figure 37D, which shows the water slide paper 1 being removed as a unit in the direction 66. The water slide paper 1 was not dissolved, nor was it disclosed as being applied to a substrate.

Claim 24

Claim 24 depends from claim 23 and incorporates its limitations. The limitations of claim 23 are not disclosed by Ross '529 for the reasons stated in relation to the rejection of claim 23. Claim 23 is patentable over this ground of rejection, and claim 24 is patentable as well.

Claim 24 also recites in part:

"the step of transferring includes the step of  
bonding the optical coating to the article surface with a bonding  
element."

Ross has no such disclosure, and the explanation of the rejection does not assert that it does. The closest the explanation of the rejection comes is to reference col. 43, lines 35-43 of Ross, but this portion of Ross does not mention a bonding element, an adhesive, or anything of the sort.

**Ground 2.** Claim 2 is rejected under 35 USC 103 over Ross '529 in view of Duchane '999.

Claim 2 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Duchane adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 2 is patentable as well.

The discussion of the three requirements for the §103 rejection are incorporated from the Ground 1 rejection.

First requirement--there must be an objective basis for combining the teachings of the references

The two references teach quite different approaches. Ross teaches a transfer approach, while Duchane teaches that the deposited metal film is to stay on the same support structure upon which it was initially deposited (the polyvinyl film is dissolved). There is no guidance in the references as to how to combine the teachings, and how to resolve the different approaches and different results. The explanation of the rejection (Final Office Action, page 4, lines 7-11) discusses two of the objectives of Duchane, but these are merely objectives of Duchane and not objective reasons to combine the teachings of Duchane with the different teachings of Ross. Duchane's objectives are possibly fulfilled with Duchane's approach, but not with those of Ross and his transfer technique. If the teachings of Duchane are to be combined with those of Ross, some objective basis for reconciling the different approaches must be provided.

The explanation of the rejection does not explain how these two different teachings are to be used together. That is, there is no objective basis stated for combining the teachings of the references.

If the rejection is maintained, Applicant asks that the Examiner indicate the objective basis for combining the teachings of these two completely different approaches.

Second requirement--there must be  
an expectation of success

The explanation of the rejection does not mention this requirement. It is highly unlikely that there could be an expectation of success in combining the teachings of two references with entirely different approaches and none has been set forth here.

Third requirement--the prior art  
must teach the claim limitations

Claim 2 recites in part:

"the step of providing a deposition substrate includes the step of  
providing an organic deposition substrate."

In the reconstruction proposed in the explanation of the rejection (Final Office Action, page 4, lines 3-6), the polyvinyl alcohol is analogized to the recited "deposition substrate."

However, parent claim 1, which provides the antecedent basis, recites in part:

"providing a deposition substrate; thereafter  
applying a first release system to the deposition substrate..."

In Duchane, the polyvinyl alcohol is the release system for the supporting structure, because the polyvinyl alcohol is dissolved as part of the processing. Thus, to identify the polyvinyl alcohol as the organic deposition substrate is not correct, because it cannot be both the deposition substrate and the release system.

The Response to Arguments does not respond to this point. The explanation of the rejection and the Response seek to have the polyvinyl alcohol serve both as the deposition substrate and as the release coating. These are separately recited elements, because the release system must be applied to the deposition substrate.

**Ground 3.** Claim 3 is rejected under 35 USC 103 as unpatentable over Ross '529 in view of Shaul U.S. Patent 3,925,138.

Claim 3 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections,

which discussion is incorporated here. Shaul adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 3 is patentable as well.

The discussion of the three requirements for the §103 rejection are incorporated from the Ground 1 rejection.

First requirement--there must be an objective basis for combining the teachings of the references

Ross deals with release materials, but Shaul does not. As discussed at page 4, lines 15-22 of the Final Office Action, Shaul does use aluminum as a carrier and dissolves the carrier. But the aluminum does not serve as a release material. In the example referenced in the explanation of the rejection, col. 7, lines 18-23 of Shaul, the aluminum is the surface layer. The aluminum surface layer is then etched away, in preparation for later depositing another layer on the surface of the substrate. In this application, the aluminum does not serve as a release material whose removal releases an attached structure or causes release from an attached structure. Thus, there is no reason to use this approach in conjunction with the approach of Ross, as Ross has no need for a surface layer of aluminum to be etched away.

Second requirement--there must be an expectation of success

This requirement is not addressed in the explanation of the rejection. For the reasons just stated, the use of the aluminum surface layer of Shaul would not lead to an expectation of success in the approach of Ross.

Third requirement--the prior art must teach the claim limitations

Claim 3 further recites in part:

"the step of applying a first release system includes the step of applying an aluminum layer as the first release system."

In the example referenced in the explanation of the rejection, col. 7, lines 18-23 of Shaul, the aluminum is the surface layer. The aluminum surface layer is then etched away,

in preparation for later depositing another layer on the surface of the substrate. In this application, the aluminum does not serve as a release material whose removal releases an attached structure or causes release from an attached structure. The aluminum in Shaul's technology is more properly described as a carrier material for woven glass sheets (Shaul, col. 7, lines 11-14), not as a release layer.

The Response to Arguments does not address this point.

**Ground 4.** Claims 10-12 are rejected under 35 USC 103 over Ross '529 and further in view of Conolly U.S. Patent 4,623,087.

The discussion of the three requirements for the §103 rejection are incorporated from the Ground 1 rejection.

First requirement--there must be an objective basis for combining the teachings of the references

Ross is used in this rejection because it is said to use a release system. Conolly explicitly states that it uses a carrier member (col. 1, line 34; col. 2, line 15; col. 4, line 43). That is an entirely different approach from a release member, and there is no reasoning given as to how these two approaches might be used together. The explanation of the rejection at page 7, lines 8-11 and 16-18 that it would be obvious to use the carrier-member approach of Conolly instead of the approach of Ross, but that is not a basis for combining the teachings of these two references that teach entirely different approaches.

Second requirement--there must be an expectation of success

This requirement is not addressed in the explanation of the rejection. For the reasons just stated, the use of the carrier-member approach of Conolly would not lead to an expectation of success in the release-layer approach of Ross.

Third requirement--the prior art must teach the claim limitations

Claim 10

Claim 10 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Conolly adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 10 is patentable as well.

Claim 10 further recites in part:

“the step of furnishing the article includes the step of  
furnishing the article that is a component of a gas turbine engine.”

Conolly is relied upon for this teaching, but if the approach of Conolly is relied upon, then the carrier-member approach of Conolly must be adopted as well. In that case, there is no teaching of using a release system as recited in parent claim 1.

Claim 11

Claim 11 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Conolly adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 11 is patentable as well.

Claim 11 further recites in part:

“the step of furnishing the article includes the step of  
furnishing a new-make article.”

The explanation of the rejection recognizes that neither Ross nor Conolly teaches these limitations (Final Office Action, page 5, lines 12-18). There follows an argument to the effect that Conolly does not teach these limitations, but they are somehow to be found in Conolly. As noted earlier, MPEP 2142 requires that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” In this case, it is clear from the admission of the explanation of the rejection that Conolly does not teach the limitations of claim 11.

Lastly, it is noted that Conolly has nothing to do with optical coatings, and Ross has nothing to do with gas turbines. Conolly teaches that its coatings are hard surfacing alloys, thermal barrier materials, materials having desired electrical characteristics, and materials

having resistance to chemical environments. (col. 2, lines 10-14) None of these is an optical coating as recited in parent claim 1.

#### Claim 12

Claim 12 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Conolly adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 12 is patentable as well.

Claim 12 further recites in part:

“the step of furnishing the article includes the step of  
furnishing an article which has previously been in service.”

The explanation of the rejection recognizes that neither Ross nor Conolly teaches these limitations (Final Office Action, page 5, lines 12-18). There follows an argument to the effect that Conolly does not teach these limitations, but they are somehow to be found in Conolly. As noted earlier, MPEP 2142 requires that “the prior art reference (or references when combined) must teach or suggest all the claim limitations.” In this case, it is clear from the admission of the explanation of the rejection that Conolly does not teach the limitations of claim 12.

Lastly, it is noted that Conolly has nothing to do with optical coatings, and Ross has nothing to do with gas turbines. Conolly teaches that its coatings are hard surfacing alloys, thermal barrier materials, materials having desired electrical characteristics, and materials having resistance to chemical environments. (col. 2, lines 10-14) None of these is an optical coating as recited in parent claim 1.

**Ground 5.** Claims 13, 16-18, and 20 are rejected under 35 USC 103 over Ross '529 and further in view of Hankland U.S. Patent 4,407,685.

The discussion of the three requirements for the §103 rejection are incorporated from the Ground 1 rejection.

First requirement—there must be an objective  
basis for combining the teachings of the references



Ross is relied upon because it is said to teach the release system approach recited in claim 1. This process requires placing release materials between surfaces and then dissolving the release material. Hankland uses an entirely different approach. Hankland coats a stretchable film with a thin layer of metal. The stretchable film is stretched over a composite object, with the thin layer of metal between the stretchable film and the composite object. The stretchable film is then peeled away. (See Abstract, claim 1). The stretchable film is not located between the metal layer and the composite object, as Ross is said to teach and is recited in the present claim 1.

The explanation of the rejection does not explain how these two different approaches are to be used together. That is, there is no objective basis stated for combining the teachings of the references. Applicant asked that the Examiner address this issue, but there was no response.

Second requirement--there must be  
an expectation of success

This requirement is not addressed in the explanation of the rejection. For the reasons just stated, the approach of Hankland would not lead to an expectation of success when used with the approach of Ross.

Third requirement--the prior art  
must teach the claim limitations

### Claim 13

Claim 13 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Hankland adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 13 is patentable as well.

Claim 13 recites in part:

"the step of affixing the first face includes the step of  
positioning a bonding element between the first face of the optical  
coating and the article surface, and

pressing the bonding element, the first face, and the article surface together at an elevated temperature.”

The “first face” as recited in claim 13 is identified in parent claim 1:

“...the optical coating has a first face contacting the first release system, and a second face remote from the first face...”

That is, the “first face” previously had a first release system applied to it prior to the step of affixing.

Neither of the references teaches that a “first face,” which previously had a first release system applied thereto, then has a bonding element positioned between it and the article surface. The explanation of the rejection does not address this limitation.

#### Claim 16

Claim 16 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Hankland adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 16 is patentable as well.

Claim 16 recites in part:

“the step of affixing the first face includes the step of heating and pressing the first face using an autoclave.”

The “first face” is as described above in relation to claim 13. Neither reference teaches that a “first face,” which previously had a first release system applied thereto, is heated and pressed using an autoclave.

The explanation of the rejection recognizes that Ross has no such teaching (Final Office Action, page 6, lines 1-2), but seeks to find the teaching in Hankland. Hankland uses an entirely different approach. Hankland coats a stretchable film with a thin layer of metal. The stretchable film is stretched over a composite object, with the thin layer of metal between the stretchable film and the composite object. The stretchable film is then peeled away. (See Abstract, claim 1). The stretchable film is not located between the metal layer and the composite object, as Ross is said to teach and is recited in the present parent claim 1.

Claim 17

Claim 17 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Hankland adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 17 is patentable as well.

Claim 17 further recites in part:

"the step of affixing the first face includes the step of  
heating and pressing the first face using a vacuum bag and a general  
heat source."

The "first face" is as described above in relation to claim 13. Neither reference teaches that a "first face," which previously had a first release system applied thereto, is heated and pressed using a vacuum bag and a general heat source.

The explanation of the rejection recognizes that Ross has no such teaching (Final Office Action, page 6, lines 1-2), but seeks to find the teaching in Hankland. Hankland uses an entirely different approach. Hankland coats a stretchable film with a thin layer of metal. The stretchable film is stretched over a composite object, with the thin layer of metal between the stretchable film and the composite object. The stretchable film is then peeled away. (See Abstract, claim 1). The stretchable film is not located between the metal layer and the composite object, as Ross is said to teach and is recited in the present parent claim 1.

Claim 18

Claim 18 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Hankland adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 18 is patentable as well.

Claim 18 further recites in part:

"the step of affixing the first face includes the step of  
heating and pressing the first face using a vacuum bag and a local  
heat source."

The "first face" is as described above in relation to claim 13. Neither reference teaches that a "first face," which previously had a first release system applied thereto, is heated and pressed using a vacuum bag and a local heat source.

The explanation of the rejection recognizes that Ross has no such teaching (Final Office Action, page 6, lines 1-2), but seeks to find the teaching in Hankland. Hankland uses an entirely different approach. Hankland coats a stretchable film with a thin layer of metal. The stretchable film is stretched over a composite object, with the thin layer of metal between the stretchable film and the composite object. The stretchable film is then peeled away. (See Abstract, claim 1). The stretchable film is not located between the metal layer and the composite object, as Ross is said to teach and is recited in the present parent claim 1.

#### Claim 20

Claim 20 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Hankland adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 20 is patentable as well.

Claim 20 further recites in part:

"preparing the transfer substrate and optical coating as a plurality of tiles that are each affixed to the article surface in the step of affixing."

Neither reference has such a teaching. The explanation of the rejection does not address this limitation.

**Ground 6.** Claim 19 is rejected under 35 USC 103 as unpatentable over Ross '529 in view of Alexander U.S. Patent 3,654,016.

Claim 19 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Alexander adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 19 is patentable as well.

The discussion of the three requirements for the §103 rejection are incorporated from the Ground 1 rejection.

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First requirement--there must be an objective basis for combining the teachings of the references

As the explanation of the rejection points out (Office Action, page 8, lines 13-16), Alexander teaches an approach based on a carrier member. If a combination of the teachings is to be made adopting specific ironing teachings from Alexander, the resulting approach would use a carrier member as in Alexander, not a release system as in Ross. There is no basis for otherwise combining the disparate teachings of these two entirely different approaches. The explanation of the rejection argues that the rationale is "greatly reduced waste" (Office Action, page 8, lines 19-20), but that advantage asserted for Alexander relates only to ironing approaches, not to the release approach claimed for Ross and for the present approach. If the rejection is maintained, Applicant asks for the indication an objective basis for combining the two references, and for rationalizing the use of the different approaches.

Second requirement--there must be an expectation of success

This requirement is not addressed in the explanation of the rejection. For the reasons just stated, the approach of Alexander would not lead to an expectation of success when used with the approach of Ross.

Third requirement--the prior art must teach the claim limitations

Claim 19 recites in part:

"the step of affixing the first face includes the step of ironing the first face onto the article surface."

As discussed in relation to the rejection of claim 13 under Ground 6, which discussion is incorporated here, the "first face" referenced in claim 19 is the face that previously had a release system applied to it, which release system was later removed prior to the step of affixing. The face of the material that is being ironed in Alexander never had a release system applied to it, as far as Applicant can tell.

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Applicant repeatedly asked that the Examiner address this point, but there was no substantive response.

**Ground 7.** Claim 14 is rejected under 35 USC 103 as unpatentable over Ross '529 in view of Oliva U.S. Patent 4,153,494.

Claim 14 depends from claim 1 and incorporates its limitations. The limitations of claim 1 are not taught by Ross '529 for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Oliva adds nothing in this regard. Claim 1 is patentable over this ground of rejection, and claim 14 is patentable as well.

The discussion of the three requirements for the §103 rejection are incorporated from the Ground 1 rejection.

First requirement--there must be an objective basis for combining the teachings of the references

Oliva teaches that an adhesive or varnish is applied to a surface or to one side of a plastic sheet, and then a metallic dust is adhered to the plastic sheet and placed in contact with the surface. The metallic dust is embedded in the adhesive or varnish and thus adheres to the surface after the adhesive or varnish hardens. There is no coating of the metallic dust.

The approach of Oliva is utterly inconsistent with that of the proposed approach of Ross. Oliva does not use both a deposition substrate and a transfer support, as required by the present claims and as attempted to be simulated by the teachings of Ross. Taking the plastic sheet of Oliva to be a deposition support, because the metallic dust is deposited on this plastic sheet, then Oliva has no transfer support. If the teachings of Oliva are to be combined with those of Ross, then this combined teachings of the three references has no transfer support. The result is that the limitations of claim 1, which are incorporated into the interpretation of claim 14, are not met by the combination of the three references: there is no transfer support as recited in claim 1. If it is argued that the teachings are modified so as to again insert a transfer support, that is a per se hindsight reconstruction.

Second requirement--there must be an expectation of success

This requirement is not addressed in the explanation of the rejection. For the reasons just stated, the approach of Oliva would not lead to an expectation of success when used with the approach of Ross.

Third requirement--the prior art  
must teach the claim limitations

Claim 14 recites in part:

“...the step of affixing the first face includes the step of  
bonding a bonding element to the article surface, and thereafter  
bonding the first face of the optical coating to the bonding element.”

Applicant agrees with the explanation of the rejection that Ross does not teach this limitation.

As discussed in relation to the rejection of claim 13 under Ground 6, which discussion is incorporated here, the “first face” referenced in claim 14 is the face that previously had a release system applied to it, which release system was later removed prior to the step of affixing. The face of the material in Oliva never had a release system applied to it, as far as Applicant can tell. The Examiner never responded to this point.

Further, Oliva does not teach an optical coating, or any coating for that matter. Oliva teaches metallic dust that is embedded into the varnish or adhesive on the surface. In one embodiment, Oliva applies the varnish or adhesive to the surface of the article, and then, prior to bonding the varnish to the surface, adds the metallic dust into the wet varnish (Oliva, col. 2, lines 29-41). The combination of the three references does not teach the limitation “bonding the bonding element to the article surface, and thereafter bonding the optical coating to the bonding element.” In fact, as discussed at col. 2, lines 29-41, the two steps must be performed simultaneously.

In the other embodiment of Oliva (col. 2, lines 42-51), the varnish is applied to the face of a plastic sheet which already has metallic dust adhered thereto. Before the varnish hardens, the plastic sheet is pressed against the article surface and held in place until the varnish hardens. Again, the bonding of the metallic dust to the varnish occurs simultaneously with the bonding of the varnish to the article surface. The combination of the three references does not teach the limitation “bonding the bonding element to the article surface, and thereafter bonding the optical coating to the bonding element,” because the two bondings occur simultaneously.

The explanation of the rejection and the Response persist in calling the metallic dust a coating, but it is not and Oliva never refers to it as such. The metallic dust is individual particles that are adhered to the surface.

**Ground 8.** Claims 21 and 22 are rejected under 35 USC 103 over Ross '529 in view of Duchane '999 and Hankland '685.

The discussion of the three requirements for the §103 rejection are incorporated from the Ground 1 rejection.

Claim 21

First requirement--there must be an objective basis for combining the teachings of the references

Ross and Duchane teach quite different approaches. Ross teaches a transfer approach, while Duchane teaches that the deposited metal film is to stay on the same support structure upon which it was initially deposited (the polyvinyl film is dissolved). There is no guidance in the references as to how to combine the teachings, and how to resolve the different approaches and different results. The explanation of the rejection (Final Office Action, page 8, lines 8-12) discusses two of the objectives of Duchane, but these are merely objectives of Duchane and not objective reasons to combine the teachings of Duchane with the different teachings of Ross. Duchane's objectives are possibly fulfilled with Duchane's approach, but not with those of Ross.

The explanation of the rejection does not explain how these two different approaches are to be used together. That is, there is no objective basis stated for combining the teachings of the references.

Ross is relied upon because it is said to teach the release system approach recited in claim 1. This process requires placing release materials between surfaces and then dissolving the release material. Hankland uses an entirely different approach. Hankland coats a stretchable film with a thin layer of metal. The stretchable film is stretched over a composite object, with the thin layer of metal between the stretchable film and the composite object. The stretchable film is then peeled away. (See Abstract, claim 1). The stretchable film is not located between the metal layer and the composite object, as Ross is said to teach and is recited in the present claim 1.



The explanation of the rejection does not explain how these two different approaches are to be used together. That is, there is no objective basis stated for combining the teachings of the references.

Second requirement--there must be  
an expectation of success

This requirement is not addressed in the explanation of the rejection. For the reasons just stated, Applicant the approaches of Duchane and Hankland would not lead to an expectation of success when used with the approach of Ross.

Third requirement--the prior art  
must teach the claim limitations

Claim 21 recites in part:

applying a first release system to the deposition substrate; thereafter  
depositing the optical coating onto the deposition substrate, with the  
first release system between the optical coating and the deposition substrate,  
wherein the optical coating has a first face contacting the first release system,  
and a second face remote from the first face; thereafter

providing a release-and-transfer structure having a second release  
system integrated with a transfer substrate; thereafter" [emphasis added].

Claim 21 recites two different release systems. None of the references has any teaching of "a first release system" and "a second release system." The explanation of the rejection does not address this limitation.

In the explanation of the claim 1 rejection (Ground 1), the "water slide paper" of Ross was mistakenly described as a "water slide coating" to argue that it is dissolved. The explanation of the rejection interprets "water slide paper" to suggest that something dissolves in water, but there is no basis in Ross or other document of record to support this interpretation. If Applicant understands the Response to Arguments correctly, it is asserted that the "water slide paper" is a release system that meets the language "applying a first release system to the deposition substrate." The "water slide" is not a release system that is applied to a deposition substrate; see for example the Abstract of Ross, which identifies "water slide paper." Ross never uses the term "water slide coating" as found in the explanation of the rejection, and instead refers to "water slide paper." Ross discloses the

use of water slide paper 1 at col. 60, line 42-col. 61, line 11, and illustrates the approach using water slide paper in Figure 37D.

Nor does the water slide paper of Ross meet the claim language “the first release system is dissolvable in a first-release-coating solvent that does not dissolve the second release system.” The water slide paper does not dissolve in water or anything else, as is clear from Figure 37D, which shows the water slide paper 1 being removed as a unit in the direction 66. The water slide paper 1 was not dissolved, nor was it disclosed as being applied to a substrate.

Claim 21 further recites in part:

“the first release system is dissolvable in a first-release-coating solvent that does not dissolve the release-and-transfer structure.”

None of the references has any teaching that a first release system is dissolvable in a first-release-coating solvent that does not dissolve a release-and-transfer structure.

Claim 21 further recites in part:

“the step of affixing including the steps of  
    positioning a bonding element between the first face of the optical coating and the article surface, and  
    pressing the bonding element, the first face, and the article surface together at an elevated temperature.”

As discussed in relation to the rejection of claim 13 under Ground 6, which discussion is incorporated here, the “first face” referenced in claim 21 is the face that previously had a release system applied to it, which release system was later removed prior to the step of affixing. The materials in the references never had a release system applied to them, as far as Applicant can tell. During prosecution, Applicant asked that the Examiner indicate the teaching in the references of a release system applied to the “first face,” which was thereafter processed as recited in the above excerpt, but there was no response.

#### Claim 22

The discussion of the first and second requirements for the §103 rejection are incorporated from the above discussion of claim 21.

Third requirement--the prior art  
must teach the claim limitations

Claim 22 depends from claim 21 and incorporates its limitations. The limitations of claim 21 are not taught by the references for the reasons stated in relation to the prior rejections, which discussion is incorporated here. Claim 21 is patentable over this ground of rejection, and claim 22 is patentable as well.

Claim 22 further recites in part:

“the step of applying a second release system and transfer substrate includes  
the step of

providing the release-and-transfer structure as a polymeric releasable  
adhesive tape.”

As noted earlier in relation to the rejections of claims 1 and 21, none of the references teaches “a second release system,” and accordingly there is no step of “applying a second release system...” Nor do the references teach a “release-and-transfer structure,” and therefore the references cannot teach this limitation.

### SUMMARY AND CONCLUSION

Ross is the sole or primary reference in all of the grounds of rejection. Although Ross has a long discussion with many different embodiments, it does not disclose the present approach with two release coatings used in an interrelated manner. The attempt to read Ross' disclosure of "water slide paper" as a "water slide coating" that serves as a release coating is technically incorrect.

The references do not teach the other limitations of the claims for the reasons stated.

Applicant asks that the Board reconsider and withdraw the rejection.

For all of the foregoing reasons, Applicant asks that the Board reverse the rejections. The Commissioner is authorized to charge any fees that may be due or credit any overpayments to the undersigned's Account Number 50-1059.

Respectfully submitted,

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Dated: June 15, 2007

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APPENDIX I

Copy of Claims Involved in the Appeal

1. A method for applying an optical coating to an article surface of an article, comprising the steps of:

providing a deposition substrate; thereafter

applying a first release system to the deposition substrate; thereafter

depositing the optical coating onto the deposition substrate, with the first release system between the optical coating and the deposition substrate, wherein the optical coating has a first face contacting the first release system, and a second face remote from the first face; thereafter

applying a second release system and a transfer substrate to the second face of the optical coating, wherein the first release system is dissolvable in a first-release-coating solvent that does not dissolve the second release system; thereafter

dissolving the first release system in the first-release-coating solvent to separate the optical coating from the deposition substrate, wherein the first face of the optical coating becomes an exposed free face; thereafter

furnishing the article having the article surface; thereafter

affixing the first face of the optical coating to the article surface; and thereafter

separating the transfer substrate from the second face of the optical coating.

2. The method of claim 1, wherein the step of providing a deposition substrate includes the step of

providing an organic deposition substrate.

3. The method of claim 1, wherein the step of applying a first release system includes the step of

applying an aluminum layer as the first release system.

4. The method of claim 1, wherein the step of depositing the optical coating includes the step of

depositing the optical coating as a multilayer coating.

5. The method of claim 1, wherein the step of applying a second release system and transfer substrate includes the step of

providing a compliant transfer substrate.

6. The method of claim 1, wherein the step of applying a second release system and transfer substrate includes the step of providing a castable transfer substrate.

7. The method of claim 1, wherein the step of applying the second release system and transfer substrate includes the steps of

applying the second release system to the second face of the optical coating, wherein the second release system has a first face contacting the second face of the optical coating, and a second face remote from the first face, and thereafter

affixing the transfer substrate to the second face of the optical coating, with the second release system between the transfer substrate and the second face of the optical coating.

8. The method of claim 1, wherein the step of applying the second release system and transfer substrate includes the step of

providing a release-and-transfer structure having the second release system integrated with the transfer substrate.

9. The method of claim 1, wherein the step of applying the second release system and transfer substrate includes the step of

providing a release-and-transfer structure having the second release system integrated with the transfer substrate, wherein the release-and-transfer structure is a polymeric releasable adhesive tape.

10. The method of claim 1, wherein the step of furnishing the article includes the step of

furnishing the article that is a component of a gas turbine engine.

11. The method of claim 1, wherein the step of furnishing the article includes the step of

furnishing a new-make article.

12. The method of claim 1, wherein the step of furnishing the article includes the step of

furnishing an article which has previously been in service.

13. The method of claim 1, wherein the step of affixing the first face includes the step of

positioning a bonding element between the first face of the optical coating and the article surface, and

pressing the bonding element, the first face, and the article surface together at an elevated temperature.

14. The method of claim 1, wherein the step of affixing the first face includes the step of

bonding a bonding element to the article surface, and thereafter

bonding the first face of the optical coating to the bonding element.

15. The method of claim 1, wherein the step of affixing the first face of the optical coating to the article surface includes the step of

bonding the first face of the optical coating to a bonding element, and thereafter

bonding the bonding element to the article surface.

16. The method of claim 1, wherein the step of affixing the first face includes the step of

heating and pressing the first face using an autoclave.

17. The method of claim 1, wherein the step of affixing the first face includes the step of

heating and pressing the first face using a vacuum bag and a general heat source.

18. The method of claim 1, wherein the step of affixing the first face includes the step of

heating and pressing the first face using a vacuum bag and a local heat source.

19. The method of claim 1, wherein the step of affixing the first face includes the step of

ironing the first face onto the article surface.

20. The method of claim 1, wherein the method includes the step of

preparing the transfer substrate and optical coating as a plurality of tiles that are each affixed to the article surface in the step of affixing.

21. A method for applying an optical coating to an article surface of an article, comprising the steps of:

providing an organic deposition substrate; thereafter

applying a first release system to the deposition substrate; thereafter

depositing the optical coating onto the deposition substrate, with the first release system between the optical coating and the deposition substrate, wherein the optical coating has a first face contacting the first release system, and a second face remote from the first face; thereafter

providing a release-and-transfer structure having a second release system integrated with a transfer substrate; thereafter

applying the release-and-transfer structure to the second face of the optical coating, wherein the first release system is dissolvable in a first-release-coating solvent that does not dissolve the release-and-transfer structure; thereafter

dissolving the first release system in the first-release-coating solvent to separate the optical coating from the deposition substrate, wherein the first face of the optical coating becomes an exposed free face; thereafter

furnishing the article having the article surface; thereafter

affixing the first face of the optical coating to the article surface, the step of affixing including the steps of

positioning a bonding element between the first face of the optical coating and the article surface, and

pressing the bonding element, the first face, and the article surface together at an elevated temperature; and

separating the transfer substrate from the second face of the optical coating.

22. The method of claim 21, wherein the step of applying a second release system and transfer substrate includes the step of

providing the release-and-transfer structure as a polymeric releasable adhesive tape.

23. A method for applying an optical coating to an article surface of an article, comprising the steps of:



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depositing the optical coating onto a deposition substrate separate from the article surface;

furnishing the article having the article surface; and thereafter

transferring the optical coating from the deposition substrate to the article surface, wherein the method utilizes two different release systems to accomplish the step of transferring.

24. The method of claim 23, wherein the step of transferring includes the step of bonding the optical coating to the article surface with a bonding element.

APPENDIX II

Evidence Entered and Relied Upon in the Appeal

None

APPENDIX III

Related Proceedings

See attached.